

NAD

HTR-1

SYSTEM REMOTE CONTROL
OWNER'S MANUAL



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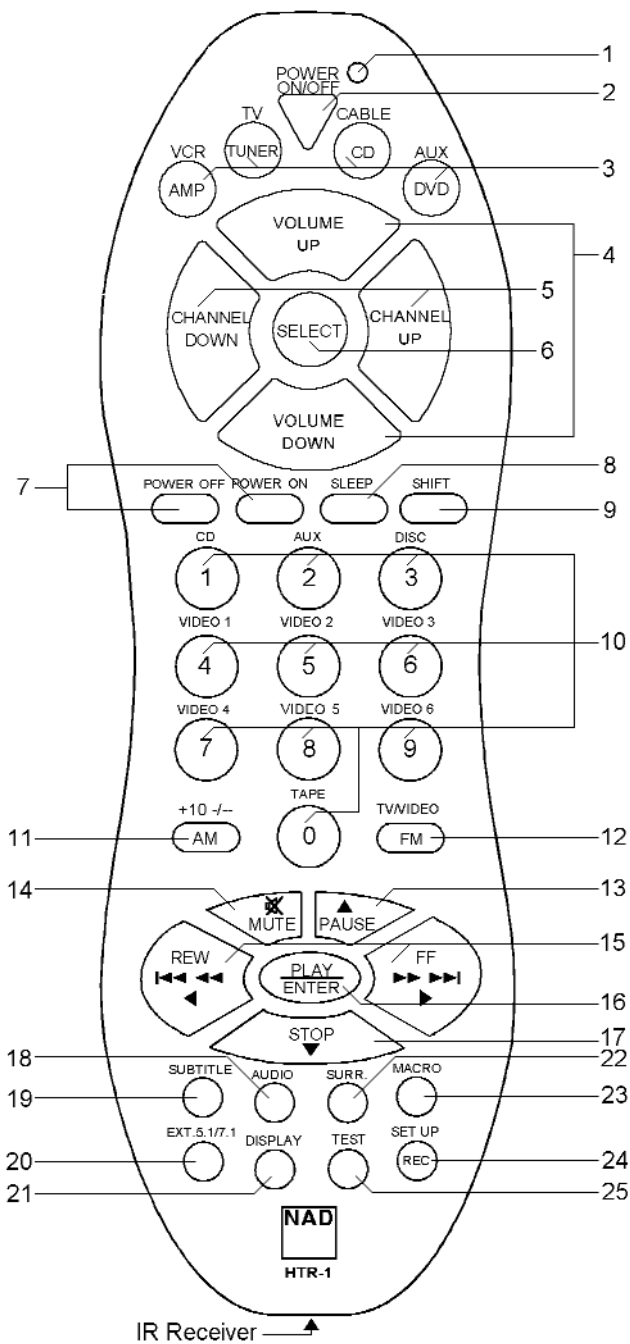
USING THE NAD HTR-1 UNIVERSAL REMOTE CONTROL WITH THE NAD T761 AV RECEIVER

The NAD HTR-1 Universal Remote control packed with your NAD T761 AV receiver has been pre-configured to operate all controls. Besides operating the receiver, the HTR-1 can replace up to eight remote controls for different devices. It has a database of remote control commands built-in for a large range of different brands and devices. In case your particular brand or model isn't featured in the database, the HTR-1 can also "learn" remote commands from the original remote control of the device. Refer to the HTR-1 instruction manual on how to program.

The table below indicates the locations and functions available; the numbers refer to the drawing in the NAD HTR-1 manual. Refer to the T761 instruction manual for explanation of specific functions.

Make sure the "AMP" mode has been selected when using the HTR-1 Universal Remote Control to operate your receiver.

No.	Key description	T761 function
2	POWER ON/OFF	Power On/Off
3	AMP (VCR), TUNER (TV), CD (CABLE), DVD (AUX)	Select AMP for T761
4	VOLUME UP/DOWN	Master Volume Up/Down
5	CHANNEL UP/DOWN	Preset/Tune Up/Preset/Tune Down
6	SELECT	Preset/Tune mode
7	POWER OFF & POWER ON	Power Off & Power On
8	SLEEP	Sleep
9	SHIFT	—
10	1 (CD), 2 (AUX), 3 (DISC),... ..9 (VIDEO 6), 0	Input select
11	AM (+10 -/—)	Select AM
12	FM (TV/VIDEO)	Select FM
13	PAUSE	OSD Cursor Up
14	MUTE	Volume Mute
15		OSD Cursor Right & Left
16	PLAY/ENTER	Enter
17	STOP	OSD Cursor Down
18	AUDIO	Tone Control
19	SUBTITLE	Dynamic Range
20	EXT 5.1/7.1	Ext 5.1
21	DISPLAY	Display
22	SURR.	Surround Mode
23	MACRO	—
24	SETUP/REC	Channel select
25	TEST	Surround Test On/Off



INTRODUCTION

The NAD HTR-1 Universal Remote Control can replace up to eight different individual remote controls, offering command of the most important and often used controls, thus significantly reducing "remote control clutter": Amplifier, Tuner, CD, DVD, VCR, TV, Cable, Custom.

If the NAD HTR-1 came packed with an NAD product, such as an AV receiver, all commands will already have been programmed in and is ready for use with the product. Where appropriate, the correct generic remote control commands for other NAD products, such as CD players for instance, have also been programmed in.

The HTR-1 comes with a large database of remote control commands for other brands, making it easy to configure to suit the particular mix of brands and models in your system. The database contains remote control commands for over four hundred brands. In the unlikely case you are not able to find the remote control commands for a specific brand, the HTR-1 also allows you to "learn" remote commands from the original remote control so that that device can still be remotely operated with the NAD HTR-1.

GENERAL

Alkaline batteries are recommended for maximum operating life. Three AAA (R 03) batteries should be fitted in the battery compartment at the rear of the Remote Control handset. When replacing batteries, check that they have been put in the right way round, as indicated on the base of the battery compartment.

The keys on the HTR-1 are backlit for ease of operation in darkened environments. Backlighting is automatically activated as soon as any key is pressed. To preserve batteries, it switches itself off automatically five seconds after the last key press.

When you find that operating range and angle are rapidly decreasing and that the key backlighting is getting dimmer, it may be time to replace the batteries. The NAD HTR-1 has a non-volatile memory so that, even if the batteries are removed for a prolonged period of time, it will retain all settings and commands as programmed. The HTR-1 will operate up to a distance of 16ft (5m). Direct sunlight or very bright ambient lighting may affect the operating range and angle.

NOTE

There must be a clear line-of-sight path from the remote control to each of the devices' infrared receiver (usually located behind a display window on the front panel); if that path is obstructed, the remote control may work erratically or not at all.

USING THE NAD HTR-1

The HTR-1 will replicate the most common commands for the device selected. For instance, "CHANNEL UP" will advance preset or channel selection for either Tuner, TV or Cable device; but will move cursor up with DVD selected as device. Once the remote control has been configured to suit your system (refer to chapters "Setting up Pre-programmed Remote Commands" and "Learning Remote Commands") it is ready for use. The numbers refer to the drawing.

The table below specifies what commands are available for all devices in the factory default setting. The devices Amp, Tuner, CD and DVD come standard with remote control commands suitable for most NAD remote controlled products.

NOTE

The key listing below specifies what each key will do from the factory default setting for the various devices. Refer to the original instruction manual for the devices in your system to check how these respond to specific commands.

Not all commands on the HTR-1 may be available for the devices it is used with or there may be commands not available on your specific device. The key listing below assumes factory default setting or settings from database but not remote commands learned from an original remote control

SELECTING WHICH DEVICE TO OPERATE

Each of the four device keys allows operation of two different devices, up to eight different devices can be controlled. The devices that can be controlled are labelled on the key itself and directly over it.

SELECTING PRIMARY DEVICES

To access one of the four primary devices (the ones as labelled on the key itself: AMP, TUNER, CD, DVD), simply press the required key.

Primary Device keys: AMP; TUNER; CD; DVD (No. 3).

SELECTING SECONDARY DEVICES

To access one of the secondary devices, first press the "SHIFT" key (No. 9) (STATUS LED, No. 1, lights up), and within the default time of 5 seconds, press the required device key (VCR, TV, CABLE, CUSTOM). The Device key will light up with Status LED briefly to confirm, after which both will extinguish.

Secondary Device keys: VCR; TV; CABLE; CUSTOM (No. 3).

After selecting a primary or secondary device by pressing the key(s) as described above, the other keys on the remote control will be set to operate the chosen device. For instance, with TUNER selected as device, the "CHANNEL UP" and "DOWN" keys (No. 5) will select the next higher, respectively next lower tuner preset station. With DVD selected as device, the same keys will move the DVD Menu cursor Up or Down.

When pressing a key, the selected Device key will flash to indicate a command is being transmitted. If the selected device key doesn't flash when pressing a key, it means that the key doesn't have a function for the device selected.

STATUS LED (NO.1)

This LED will light up to indicate status: Use of "SHIFT" key (No. 9) and Set-up mode. The LED will light up green for up to 5 seconds once the "SHIFT" key (No. 9) has been pressed. Within these 5 seconds, one of the four device keys (No. 3) can be pressed to switch the remote control to one of the secondary devices (VCR, TV, CABLE, CUSTOM). The Device key will light up with Status LED briefly to confirm, after which both will extinguish. The LED will extinguish within 5 seconds if no other key is pressed or if "SHIFT" is pressed again.

The LED will light up red to enter set-up mode (pressing "POWER ON/OFF" No. 2; and "MUTE" No. 14 simultaneously for two seconds). Refer to chapters "Setting up Pre-programmed Codes" and "Learning Remote Commands" for additional information.

SETTING UP PRE-PROGRAMMED CODES

The HTR-1 has an extensive library built-in for pre-programmed remote control commands for many different brands. By entering the device code for the particular device and brand, all major functions for that device can be controlled with the HTR-1.

There are two ways of setting up the remote control for pre-programmed remote commands:

- By using the LIBRARY SEARCH routine
- By entering the MANUFACTURER ID CODE

SET-UP BY LIBRARY SEARCH

- 1 Switch on your device manually or with your original remote control.
- 2 Press the POWER ON/OFF (No. 2) and MUTE keys (No. 14) together for approximately 2 seconds until STATUS LED (No.1) stays red.
- 3 Press the required DEVICE key (No. 3); the DEVICE key will light up.
- 4 Press the POWER ON/OFF key (No. 2) and hold down for 2 seconds then release for 2 seconds. Repeat this process until your device switches off or to Stand-by. NOTE: If you accidentally skipped a code that turned your device off, you can go one code back by pressing the MUTE key (No. 14). If there is no Power On/Off code for a particular device, the HTR-1 will transmit a "Play" command instead.
- 5 After your device has switched off, press the lit DEVICE Key once to stop the LIBRARY SEARCH.
- 6 Try the appropriate keys to see if the corresponding function for your device work (in case your device switched off completely, it may be necessary to manually power it up again).
 - If you find that not all the keys appropriate for your device operate correctly, press the DEVICE Key for 1 second; the DEVICE Key will flash once. Repeat step 4 to find the set of remote commands that best operates your device. Once found, proceed with step 7 to store.
- 7 If you find all the major functions work correctly with your device, press the DEVICE Key (No.3) 3 times until the DEVICE Key and STATUS LED (No. 1) go out. The code is now stored.

Example

You wish to set up the remote control to operate your TV:

- 1 Switch on your television
- 2 Press the POWER ON/OFF (No. 2) and MUTE keys (No. 14) together for approximately 2 seconds until STATUS LED (No.1) stays red.
- 3 Press SHIFT (No. 9); the STATUS LED changes to green. Press the TUNER/TV device key (No.3). The STATUS LED will change to red again.
- 4 Press the POWER ON/OFF key (No. 2) and hold down for 2 seconds then release for 2 seconds. Repeat this process until the TV switches off or switches to Stand-by.
- 5 Press the lit DEVICE KEY once, and now try the other function keys on the HTR-1. Switch the TV back on (if it switched off completely, it may be necessary to this manually) and try out all the keys appropriate for your TV; such as Volume Up/Down; Channel Up/Down; Mute, etc. (refer also to table).
 - If you find not all keys operate your TV correctly, press the DEVICE Key for 1 second; the DEVICE Key will flash once. Repeat step 4 until you find the set of remote commands that best operates your TV. Once found, proceed with step 6 to store.
- 6 If all major functions work, press the TUNER/TV key 3 times; The TUNER/TV device key and STATUS LED will extinguish. The code is now stored and the remote control is ready for use with the TV.

When you reach the end of the library, The STATUS LED will flash twice per second and the set up mode is cancelled.



ENTERING MANUFACTURER ID CODE

Instead of searching the library, you can also enter a Manufacturer ID code directly for your brand and model.

In the code listing table, look up the device brand name to find the correct code for your brand. Switch on your device manually or with your original remote control.

- 1 Press the POWER ON/OFF (No. 2) and MUTE keys (No. 14) together for approximately 2 seconds until STATUS LED (No.1) stays red.
- 2 Press the required DEVICE key (No.3); the DEVICE key will light up.
- 3 Using the numeric keys (No.10); enter the 4-digit Manufacturer ID code from the code list.
- 4 Again using the numeric key-pad (No. 10):
Press 1 to set-up a TUNER & TV;
Press 2 to set-up an AMP & VCR;
Press 3 to set-up a CD & CABLE or Satellite receiver.
Press 4 to set up a DVD or if you are programming any other devices (CUSTOM).
If the entered code is correct, the STATUS LED will flash once. If the code is wrong, the STATUS LED will flash twice.
- 5 It is quite common for a brand to have various sets of remote control commands. In order to find the correct set of remote control commands for your particular model, you will need to search within the manufacturer's ID code for the correct device code:
 - Press the POWER ON/OFF key and hold down for 2 seconds then release for 2 seconds, repeat this process until your device switches off (or switches to Stand-by). NB: If you accidentally skipped a code that turned your device off, you can go one code back by pressing the MUTE key.
- 6 Press the lit DEVICE KEY once and now try out the other function keys on the HTR-1.
 - If you find not all keys appropriate for the device operate correctly, press the DEVICE Key for 1 second; the DEVICE Key will flash once. Repeat step 6 to find the set of remote commands that best operates your device. Once found, proceed with step 8 to store.
- 7 When you have found a suitable set of remote control commands, press the DEVICE Key 3 times until the DEVICE Key and STATUS LED go out. The code is now stored.

Example

You wish to set up the HTR-1 to operate your Philips TV:

- 1 Look up the Manufacturer ID code for Philips (which is 3232).
- 2 Press the POWER ON/OFF (No. 2) and MUTE keys (No. 14) together for approximately 2 seconds until STATUS LED (No.1) stays red. Press SHIFT (No. 9); the STATUS LED changes to green. Press the TUNER/TV device key (No.3). The STATUS LED will change to red again.
- 3 Using the numeric keys (No.10); enter 3232 (Philips' Manufacturer ID code).
- 4 Again using the numeric key-pad (No. 10), Press 1. The STATUS LED will flash once (if the code is wrong, the STATUS LED will flash twice).
- 5 Philips has many different sets of remote commands. In order to find the correct set of remote control commands for your particular model, you will need to search within the Philips' ID code:
 - Press the POWER ON/OFF key and hold down for 2 seconds then release for 2 seconds, repeat this process until your device switches off (or switches to Stand-by). NB: If you accidentally skipped a code that turned your device off, you can go one code back by pressing the MUTE key.
- 6 Press the lit DEVICE KEY once and now try out the other function keys on the HTR-1.
 - You may find that not all keys device operate the TV correctly; press the DEVICE Key for 1 second; the DEVICE Key will flash once. The second set that turns off your TV does operate all major functions correctly: Proceed to the next step to store.
- 7 Press the DEVICE Key 3 times until the DEVICE Key and STATUS LED go out. The code is now stored and the HTR-1 is ready for use with your Philips TV.

CODE RECALL FUNCTION

The Code Recall function allows you to look up the exact code specific for your device's brand and model. Note this is not the manufacturer IC code, but the specific device code that operates your device; this is a 5-digit number.

- 1 Press the POWER ON/OFF (No. 2) and MUTE keys (No. 14) together for approximately 2 seconds until STATUS LED (No.1) stays red.
- 2 Press the required DEVICE key (No.3); the DEVICE key will light up.
- 3 Using the numeric key-pad (No. 10) engage Code Recall Mode:
Press 88881 to check the code for a Tuner.
Press 88882 to check the code for an Amp.
Press 88883 to check the code for a CD player.
Press 88884 to check the code for a DVD player.
Press 88885 to check the code for a TV.
Press 88886 to check the code for a VCR.
Press 88887 to check the code for a Cable or Satellite receiver.
Press 88888 to check the code for any other devices (CUSTOM).
If the entered code is correct, the STATUS LED will flash once. If the code is wrong, the STATUS LED will flash twice.
- 4 To find out the number for the first digit of the code, press 1 on the Numeric keypad (No.10) and count the number of times the DEVICE flashes. To find the 2nd digit of your code press 2, for the 3rd digit press 3, for the 4th digit press 4 and for the 5th digit press 5 and each time count the number of times the DEVICE key flashes. NOTE: IF the DEVICE key doesn't flash, the digit's number is zero.
- 5 Press the DEVICE key to exit Code Recall mode. The DEVICE key will extinguish.

In case the HTR-1 gets accidentally re-programmed, it is advisable to note down in the table below which exact codes were set up to operate your devices.

Device	code	Device	code
AMP		VCR	
TUNER		TV	
CD		CABLE	
DVD		CUSTOM	

You can use the recalled device code to enter it directly into the HTR-1; this voids the need of having to go through each separate device within a manufacturer ID code:

- 1 Press the POWER ON/OFF (No. 2) and MUTE keys (No. 14) together for approximately 2 seconds until STATUS LED (No.1) stays red.
- 2 Press the required DEVICE key (No.3); the DEVICE key will light up.
- 3 Using the numeric keys (No.10); enter the 5-digit device code as found using Code Recall Function. If the entered code is correct, the STATUS LED will flash once. If the code is wrong, the STATUS LED will flash twice.
- 4 With the correct code entered, press the DEVICE Key 3 times until the DEVICE Key and STATUS LED go out. The code is now stored.



LEARNING REMOTE COMMANDS

The HTR-1 allows you to learn commands within already set-up devices. This way, you can add a desired specific function for your device to the selected pre-programmed set of remote commands, by learning that command into the required key for that device. In case none of the pre-programmed set of remote commands are suitable for your device, you can let the HTR-1 learn the remote commands for the device.

You can over-write already learned commands or commands from the pre-programmed library; this does not affect the other commands already available for the selected device.

NOTE

The NAD HTR-1 can only learn infrared commands. It is not compatible with UHF and Ultrasonic remote controls. There are some infrared remote controls that use encoding methods, which the HTR-1 cannot learn. At least 104 commands can be learned.

No remote commands can be learned into the DEVICE keys (No. 3) and SHIFT key (No. 9).

To learn remote commands from the original remote control into the NAD HTR-1:

- 1 Position the original remote control 3 to 5 cm away from the HTR-1's Infrared receiver, located at the bottom of the remote control (see drawing), with the original's remote transmission window or LED (usually at the top) pointing towards to the HTR-1's Infrared receiver.
- 2 Press the POWER ON/OFF (No. 2) and MUTE keys (No. 14) together for approximately 2 seconds until STATUS LED (No.1) stays red.
- 3 Press the required DEVICE key (No.3); the DEVICE key will light up.
- 4 Using the numeric key-pad (No. 10) engage Learning Mode:
Press 55551 to learn remote commands for TUNER DEVICE key.
Press 55552 to learn remote commands for AMP DEVICE key.
Press 55553 to learn remote commands for CD DEVICE key.
Press 55554 to learn remote commands for DVD DEVICE key.
Press 55555 to learn remote commands for TV DEVICE key.
Press 55556 to learn remote commands for VCR DEVICE key.
Press 55557 to learn remote commands for CABLE DEVICE key.
Press 55558 to learn remote commands for CUSTOM DEVICE key.
If the entered code is correct, the STATUS LED will flash once. If the code is wrong, the STATUS LED will flash twice.
- 5 Press and release the function key on the HTR-1, which you want to duplicate/learn a similar function from the original remote into; the DEVICE key flashes once.
- 6 Press and hold down the function key on the original remote. When the HTR-1 has finished copying the code, the STATUS LED will then flash once. Release the key on the original remote. If the STATUS LED flashes twice, an error has occurred in the learning process; repeat the learning process from step 5 onwards.
- 7 To program the next function key for the same device repeat steps 5-6.
- 8 When you have finished programming the various commands for the selected device, press the DEVICE key. The STATUS LED and DEVICE will extinguish. The remote commands have now been learned and stored, the HTR-1 is ready to be used with the device.

NOTE

If no key is pressed for over 10 seconds, the HTR-1 will switch back from learning mode to normal use mode.

SETTING UP AND USING MACRO FUNCTION

The Macro function allows you to send up to 6 remote commands with just one key press. This can be useful, for example to switch on your AV receiver, TV and DVD player, select the DVD input on the receiver and engage the DVD Play function with a single key press.

For each of the 8 devices, a Macro function can be set up:

- 1 Press the POWER ON/OFF (No. 2) and MUTE keys (No. 14) together for approximately 2 seconds until STATUS LED (No.1) stays red.
- 2 Press the required DEVICE key (No.3); the DEVICE key will light up.
- 3 Using the numeric key-pad (No. 10) engage Macro Setup Mode:
Press 77771 to record Macros for TUNER DEVICE key.
Press 77772 to record Macros for AMP DEVICE key.
Press 77773 to record Macros for CD DEVICE key.
Press 77774 to record Macros for DVD DEVICE key.
Press 77775 to record Macros for TV DEVICE key.
Press 77776 to record Macros for VCR DEVICE key.
Press 77777 to record Macros for CABLE DEVICE key.
Press 77778 to record Macros for CUSTOM DEVICE key.
If the entered code is correct, the STATUS LED will flash once. If the code is wrong, the STATUS LED will flash twice.
- 4 Record your Macro by selecting the functions you wish to carry out when Macro is selected, just as if you were using the remote control. You can switch devices to have remote commands from other devices within the same Macro.
- 5 Press the Macro key (No. 23) to store the Macro. The STATUS LED and DEVICE key will go out and the Macro is programmed.

NOTE

Some devices may not be capable in executing remote commands in rapid succession. When recording your macro, this problem can be avoided by alternating each commands for the various devices, see example below.

Example

With just pressing Macro for AMP as device, you wish to switch on your AV receiver, TV and DVD player; select the Video 1 input on the receiver and activate Play on the DVD player.

- 1 Press the POWER ON/OFF (No. 2) and MUTE keys (No. 14) together for approximately 2 seconds until STATUS LED (No.1) stays red.
- 2 Press the required AMP DEVICE key (No.3); the AMP key will light up.
- 3 Using the numeric key-pad (No. 10) engage Macro Setup Mode for AMP Device: Press 77772. The STATUS LED will flash once. If the code is wrong, the STATUS LED will flash twice.
- 4 Record the Macro by selecting the functions:
 - Press POWER ON/OFF (No.2) (command for switching on AV receiver).
 - Press SHIFT (No. 9); the STATUS LED changes to green. Press the TUNER/TV device key (No.3). The STATUS LED will change to red again. Press POWER ON/OFF (command for switching on TV).
 - Press DVD Device key; press POWER ON/OFF (command for switching on DVD player).
 - Press AMP Device key; press VIDEO 1 (inside No. 10) (command for switching AV receiver to Video 1 input).
 - Press DVD Device key; press PLAY/ENTER (No. 16) (command for activating Play on DVD player).
- 5 Press the Macro key (No. 23) to store the Macro. The STATUS LED and DEVICE key will go out and the Macro is programmed.

To play back a Macro, select the required device and press Macro. The macro is now executed, for each remote command send in succession, the corresponding DEVICE key will light up briefly.

NOTE

Set-up mode is automatically cancelled if no key is pressed for 15 seconds.

RESET TO FACTORY DEFAULT SETTINGS

Sometimes it may be necessary to reset the HTR-1 to its factory default settings, for instance, if you change many components in your system or do not recall how keys were programmed.

TO RESET THE NAD HTR-1

Press the POWER ON/OFF (No. 2) and SELECT keys (No. 6) together for approximately 5 seconds until STATUS LED (no.1) flashes twice.

NOTE

When you reset the remote to factory default settings, you will LOOSE ALL SETTINGS AND LEARNED REMOTE COMMANDS; ONCE ACTIVATED, RESET CAN NOT BE UNDONE!

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Drawing No.	Remote	(NAD) AMP	(NAD) TUNER	(NAD) CD	(NAD) DVD	(Shift + AMP) VCR	(Shift + TUNER) TV	(Shift + CD) CABLE	(Shift + DVD) CUSTOM
2	POWER ON/OFF	POWER ON/OFF	POWER ON/OFF	POWER ON/OFF	POWER ON/OFF	POWER ON/OFF	POWER ON/OFF	POWER ON/OFF	-
3	AMP / VCR TUNER / TV CD / CABLE DVD / CUSTOM	AMP	TUNER	CD		AMP	TUNER		
4	VOLUME+ VOLUME- CHANNEL+ CHANNEL- SELECT	VOLUME+ VOLUME- PRESET+ PRESET- PRESET/TUNE (ENTER)	VOLUME+ VOLUME- PRESET+ PRESET- PRESET/TUNE	- - - - -	CURSOR UP CURSOR DOWN CURSOR RIGHT CURSOR LEFT ENTER	TV VOLUME+ TV VOLUME- VCR PROGRAM + VCR PROGRAM - VCR MENU	TV VOLUME + TV VOLUME - PROGRAM + PROGRAM - CP MENU	TV or CAB VOL + TV or CAB VOL - CAB PROGRAM + CAB PROGRAM - CAB MENU	- - - - -
7	POWER OFF POWER ON	POWER OFF POWER ON	POWER OFF POWER ON	POWER OFF POWER ON	- -	- -	- -	- -	- -
8	SLEEP	SLEEP	-	-	ZOOM	-	-	-	-
9	SHIFT					SHIFT	SHIFT	SHIFT	
10	1 / CD 2 / AUX 3 / DISC 4 / VIDEO 1 5 / VIDEO 2 6 / VIDEO 3 7 / VIDEO 4 8 / VIDEO 5 9 / VIDEO 6 0 / TAPE	CD AUX DISC (DVD) VIDEO 1 VIDEO 2 VIDEO 3 VIDEO 4 VIDEO 5 VIDEO 6 TAPE1	PRESET 1 PRESET 2 PRESET 3 PRESET 4 PRESET 5 PRESET 6 PRESET 7 PRESET 8 PRESET 9 PRESET 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	SHIFT 1 2 3 4 5 6 7 8 9 0	SHIFT 1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	- - - - - - - - - -

Manufacturer	ID code	Manufacturer	ID code	Manufacturer	ID code
ACURA	4310	DUAL-TEC	2211	JERROLD	2430
ADMIRAL	2001	DUMONT	2212	JOHNSON	2431
AGASHI	2001	DUMONT-FINLUX	2213	JOHANSSON	2431
AIXA		DYNATECH	2214	JVC	2432
AKAI	2002	ECHOSTAR	2220	KAISER	2433
AKKAI	4334	EDISON	2220	KAISUI	2433
AKURA	4311	ELBE	2221	KAPSCH	4301
AKUSTIK	4340	ELBIT	2222	KARCHER	2434
ALBA	2003	ELCIT	2223	KARDON	4344
ALBIRAL	2004	ELECTRO TEC	4430	KATHREIN	2440
ALLORGAN	4234	ELECTRONIC	4430	KENDO	2441
AMSTRAD	2010	ELECTRONSK	4430	KENNEY	2442
ANITSCH	2011	ELMAN	2224	KENWOOD	2443
ANITECH	2011	ELIN	2224	KORTING	2444
ANKARO	2012	ELTA	2230	KRIESLER	3000
ARC EN CIEL	2013	ELTASAT	2231	KTV	3001
ARCON	2014	EMERSON	2232	KYOTO	3001
ARISTONA	2020	ERRES	2233	LENCO	3002
ARTHUR MARTIN	2021	ESTEL	2233	LENOIR	3003
ASA	2022	EUROCOM	2234	LEYCO	3002
ASTRA	2023	EUROPHON	2234	LLOYD	3004
ASUKA	4312	EXPERT	4303	LOEWE	3010
ASWO	4341	FENNER	4422	LOEWE OPTA	3011
ATLANTIC	2024	FERGUSON	2240	LOGIK	3012
AUDIOSONIC	2030	FIDELITY	2241	LUMA	3013
AUDIOTON	4240	FILMNET CABLECRYPT	4322	LUXMAN	4400
AUSIND	2031	FILSAI	4422	LUXOR	3014
AUTOVOX	2032	FINLANDIA	2242	LXI	3020
BAIRD	2034	FINLUX	2243	MACAB	3021
BARCO	2040	FIRST LINE	2244	MAGAI	3022
BARCOM	2040	FISCHER		MAGNADYNE	3023
BASIC LINE	2041	FISHER	2244	MAGNFON	3024
BAUR	4304	FORGESTONE	2300	MAGNASONIC	3030
BAZIN	2042	FORMENTI	2301	MAGNAVOX	3031
BEKO	2042	FORMENTI-PHOENIX	2301	MANHATTAN	4321
BLAUPUNKT	2043	FORTRESS	2302	MARANTZ	3032
BOOTS	4313	FRACARRO	2303	MASPRO	3033
BPL	4314	FRONTECH	2304	MATSUI	3034
BRANDT	2044	FTE	2310	MATSUSHITA	4233
BRANDT ELECTRONIQUE	2044	FUJBA	2311	MAXIMAL	3040
BRION VEGA	2100	FUJITSH	2312	MCMICHAEL	3041
BRUNS	2101	FUNAI	2312	M ELECTRONIC	4300
BSR	2102	GALERIA	2313	MEMOREX	3042
BT SATELLITE	4332	GBC	2313	METZ	3043
BUSH	2103	GE	2314	MGA	3044
CABLETIME	4103	GEC	2320	MINERVA	3100
CAMBRIDGE	2104	GELOSO	2321	MINOLTA	3101
CAMBRIDGE ARD200	2110	GENEXXA	2322	MISSON	4401
CAPEHART	2111	GIUCAR RECORD	2323	MISTRAL	3102
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